

FIG. 1

FIG. 2A

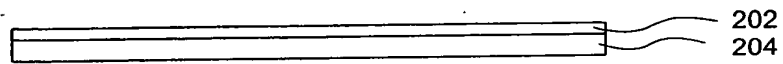


FIG. 2B

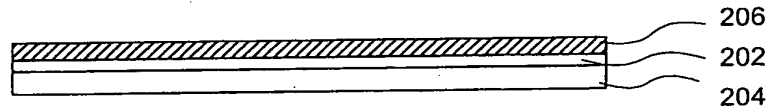


FIG. 2C

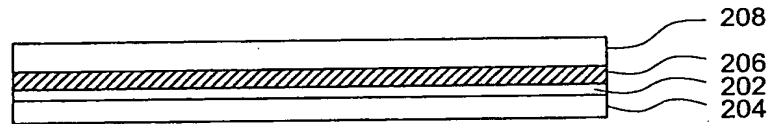


FIG. 2D

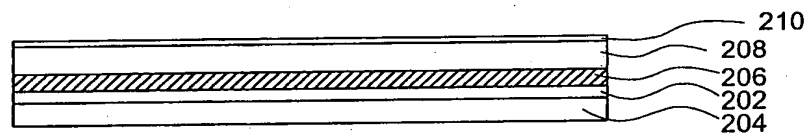


FIG. 2E

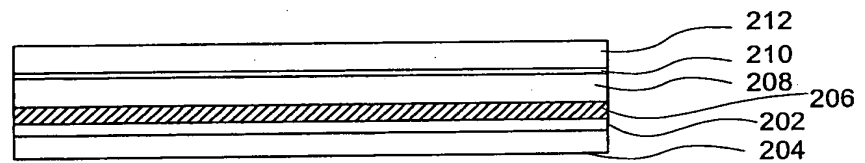


FIG. 2F

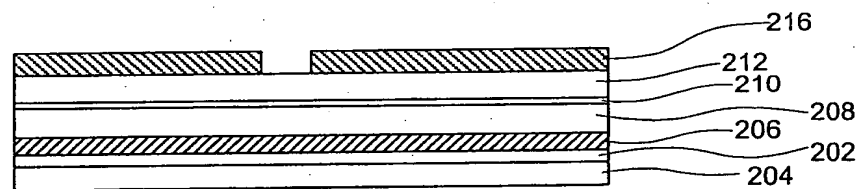


FIG. 2G

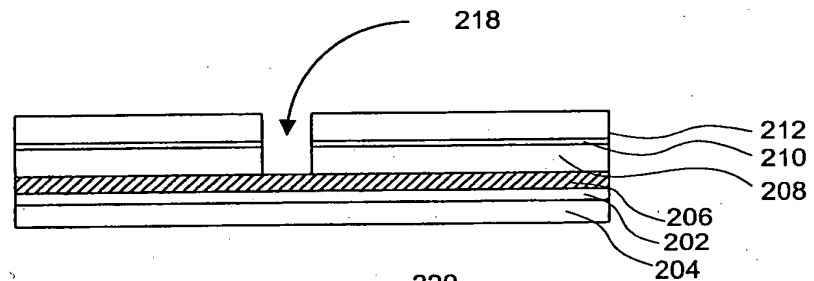


FIG. 2H

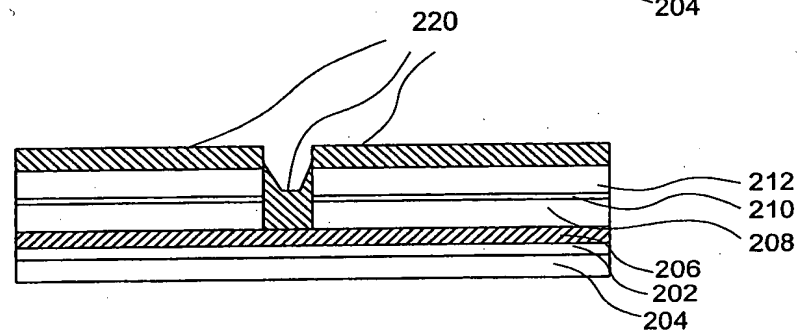


FIG. 2I

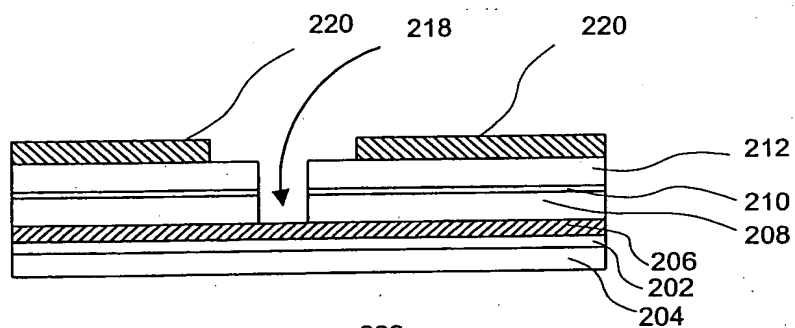


FIG. 2J

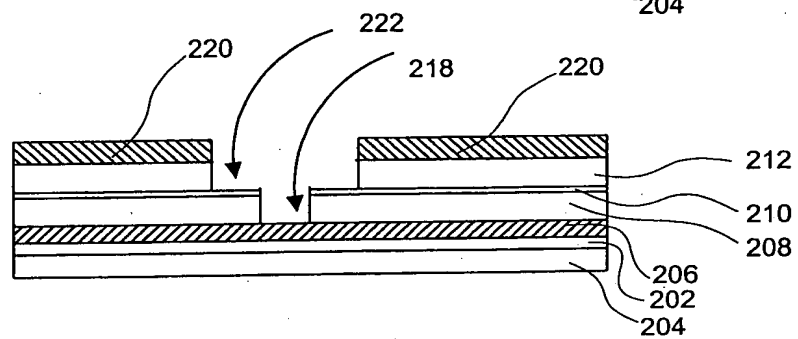


FIG. 2F'

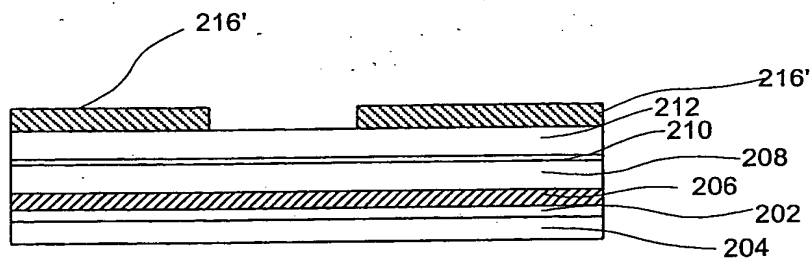


FIG. 2G'

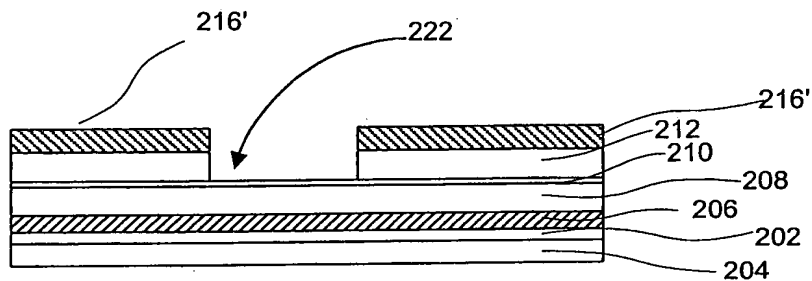


FIG. 2H'

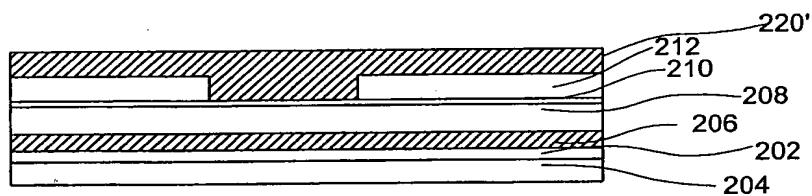


FIG. 2I'

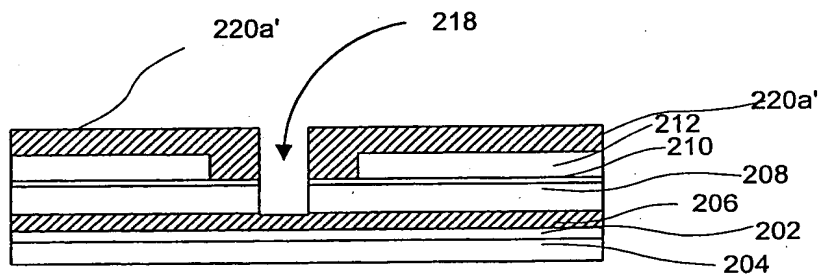


FIG. 2E''

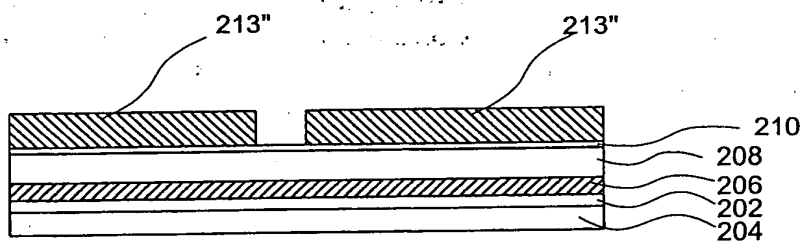


FIG. 2F''

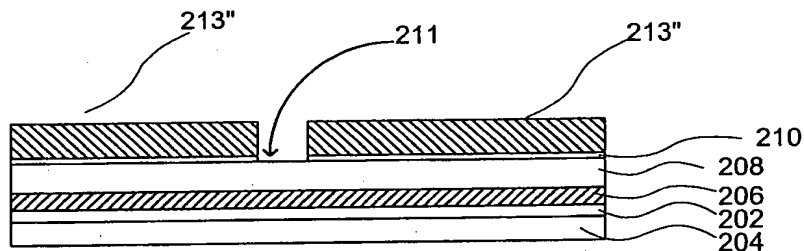


FIG. 2G''

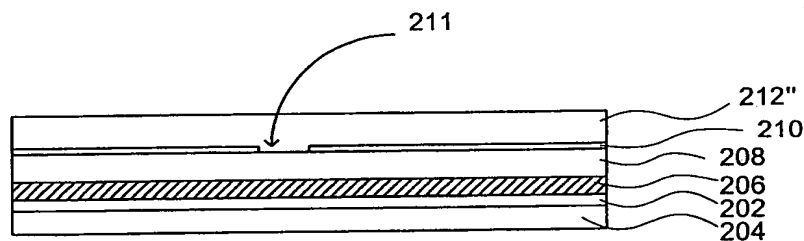
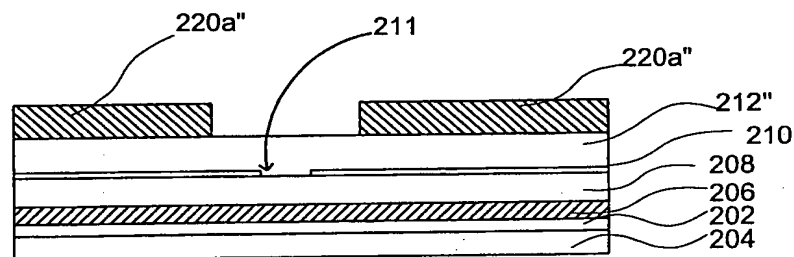


FIG. 2H''



Resist poisoning using std. N incorporated SiC barrier film After trench patterning

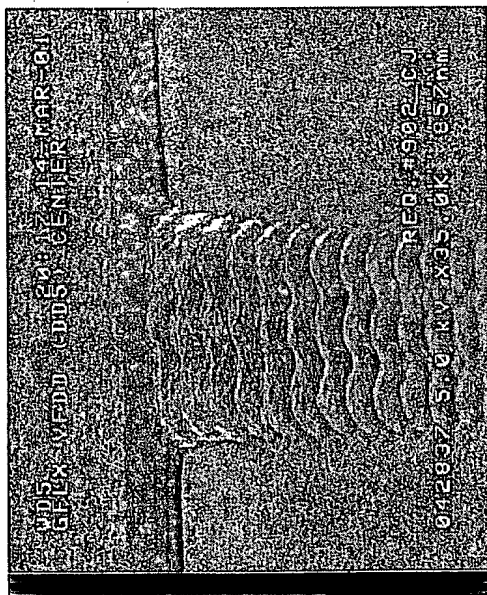


FIG. 3A

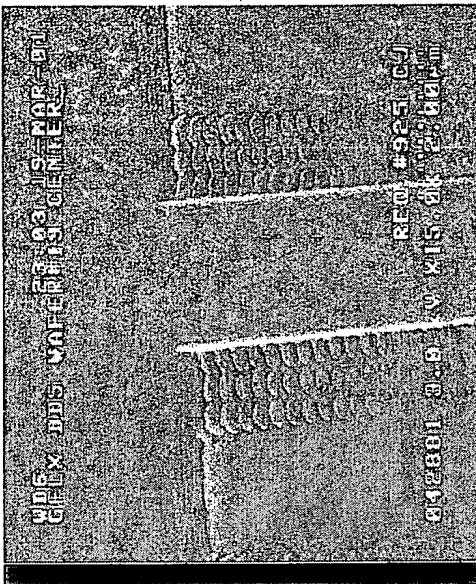


FIG. 3B

After trench etch

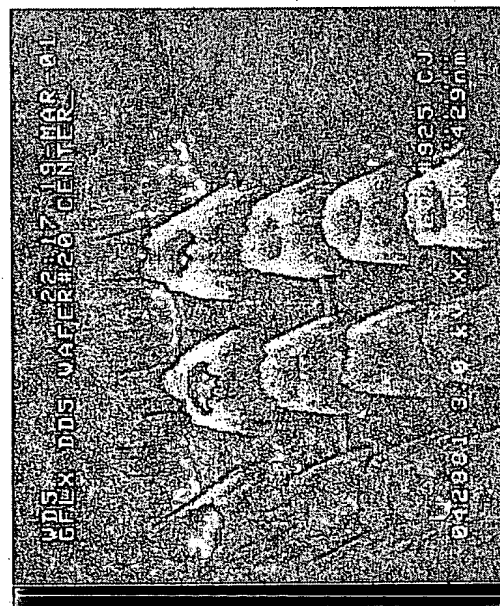


FIG. 3C

Resist poison was solved by using 2-layer barrier stack in which top layer is N free.

After trench patterning

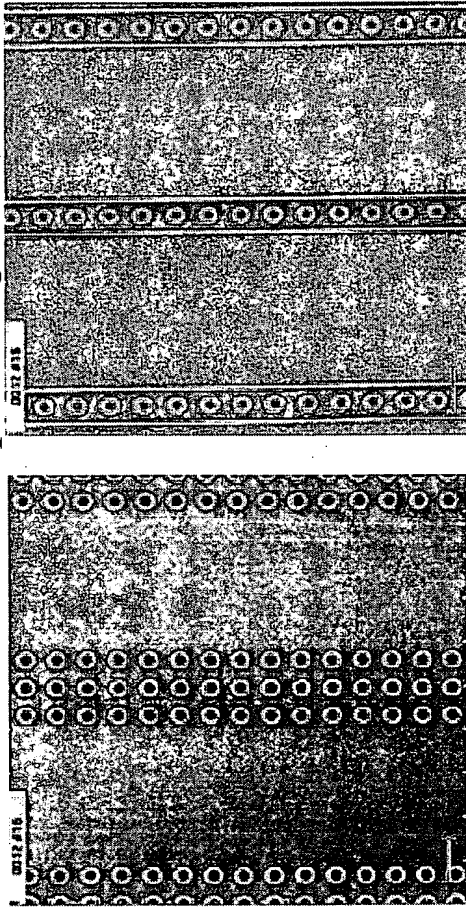


FIG. 4A

After trench etch

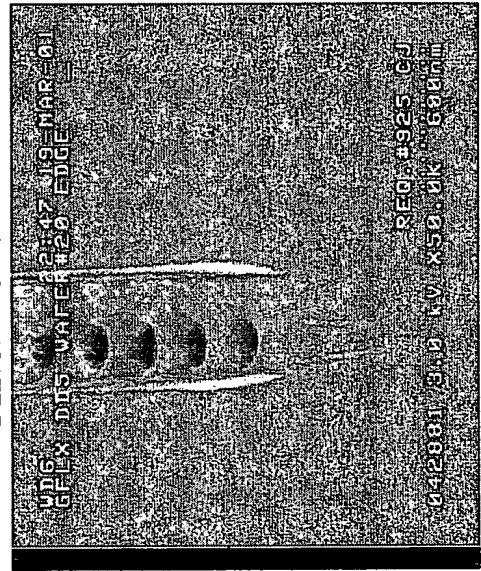


FIG. 4C

FIG. 4B